

# RECEIVED

JUL 2 5 2003 TECH CENTER 1600/2900

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<110> Niles, Andrew Maffitt, Mark Haak-Frendscho, Mary

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Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu 85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly 180 185 190

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Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Page 5

65

70

80

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Asp Trp Tile His His Tyr Val Pro Lys Lys Pro  210 9 211 249 212 PRT 213 Homo sapiens  400 9  Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp 10 15  Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe 20 25  Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His 40 45  Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu 50 70 75  The Ile Val His Pro Gln Asp Gln Leu Leu Pro Val Ser Arg 65 70 75  Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His 100  Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro 135  Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asp Asp Glu Arg Leu Pro 136  Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asp Asp Glu Arg Leu Pro 137  Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asp Asp Glu Arg Leu Pro 138	gcc Ala	cag Gln	Pro	aac Asn	cgg Arg	cct Pro	ggc Gly	Ile	tac Tyr	acc Thr	cgt Arg	gtc Val	Thr	tac Tyr	tac Tyr	ttg Leu	720
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The Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile 85 Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His 100 Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro 115 Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 135 Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 135 Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 135 Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 135 Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 135 Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 135 Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro	Cys		Gly	Pro	Asp	Val		Asp	Leu	Ala	Ala		Arg	Val	Gln	Leu	
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gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val 50 55 60	192
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age agg ate ate gtg cac cea eag tte tac ace gee eag ate gga geg Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala 80 85 90	288
gca atc gcc ctg ctg gag ctg gag gag ccg gtg aag gtc tcc agc cac Ala Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His 95 100 105 110	336
gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly 115 120 125	384
atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg 130 135 140	432
ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Page 16	480

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Cys	Gly	Gly 35	Ser	Leu	Ile	His	Pro 40	Gln	Trp	Val	Leu	Thr 45	Ala	Ala	His	
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Arg 65	Glu	Gln	His	Leu	Туг 70	Tyr	Gln	Asp	Gln	Leu 75	Leu	Pro	Val	Ser	Arg 80	
Ile	Ile	Val	His	Pro 85	Gln	Phe	Tyr	Thr	Ala 90	Gln	Ile	Gly	Ala	Ala 95	Ile	
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Ата	neu	шец														

100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro 115 120 125 ·

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 130

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His 150 155

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val 165 170

Arg Ile Val Arg Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly 200 195

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100 105 1

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Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val 165 170 175	
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Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp 180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln 210 215 220



Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp 225 230 235 240

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		c gtc aag gat ctg p Val Lys Asp Leu 55		
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		ea cag ttc tac acc to Gln Phe Tyr Thr		
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		cc cct gcc tca gag co Pro Ala Ser Glu 120		
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	gtc Val															576	5
	gac Asp															624	1
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Pro 145	Pro	Phe	Pro	Leu	Lys 150	Gln	Val	Lys	Val	Pro 155	Ile	Met	Glu	Asn	His 160	
Ile	Cys	Asp	Ala	Lys 165	Tyr	His	Leu	Gly	Ala 170	Tyr	Thr	Gly	Asp	Asp 175	Val	
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Ser	Cys	Gln 195	Gly	Asp	Ala	Gly	Gly 200	Pro	Leu	Val	Cys	Lys 205	Val	Asn	Gly	
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Pro 225	Asn	Arg	Pro	Gly	Ile 230	Tyr	Thr	Arg	Val	Thr 235	Tyr	Tyr	Leu	Asp	Trp 240	
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Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val

Page 23

96

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						gtc Val										336
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Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu 85 90 95

Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly 180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro Page 25

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ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His 65 70 75 80	0
cca cag ttc tac acc gcc cag atc gga gcg gca atc gcc ctg ctg gag Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile Ala Leu Leu Glu 85 90 95	8
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	gtc Val 50								192
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Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu
100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr 115 120 125

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Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly 180 185 190

Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln
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Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr

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Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro

120

135

Page 31

140

384

432

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Pro Pr	Ala 115	Ser	Glu	Thr	Phe	Pro 120	Pro	Gly	Met	Pro	Cys 125	Trp	Val	Thr		
Gly Tr		Asp	Val	Asp	Asn 135	Asp	Glu	Arg	Leu	Pro 140	Pro	Pro	Phe	Pro		
Leu Lya 145	s Gln	Val	Lys	Val 150	Pro	Ile	Met	Glu	Asn 155	His	Ile	Cys	Asp	Ala 160		
Lys Ty	r His	Leu	Gly 165	Ala	Tyr	Thr	Gly	Asp 170	Asp	Val	Arg	Ile	Val 175	Arg	,	
Asp Asp	o Met	Leu 180	Cys	Ala	Gly	Asn	Thr 185	Arg	Arg	Asp	Ser	Cys 190	Gln	Gly		
Asp Ala	a Gly 195	Gly	Pro	Leu	Val	Cys 200	Lys	Val	Asn	Gly	Thr 205	Trp	Leu	Gln		
Ala Gly		Val	Ser	Trp	Gly 215	Glu	Gly	Cys	Ala	Gln 220	Pro	Asn	Arg	Pro		
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	_			_				tac Tyr	_	-	-	_	_	_	_	240	)
								ttc Phe								288	1
-		-	_	_		_		gag Glu	_			-		_		336	;
-		-	_		_			gcc Ala						_		384	Į
								ggc Gly 135								432	:
								cag Gln								480	)
			_	_	_			cac His			_		_			528	ì
-	_	_		_	_	_	-	atg Met	_	_	-					576	5
								gga Gly								624	Ĺ
								gtg Val 215								672	?
-	-							tac Tyr		_	-				_	720	)
_						_		aaa Lys	-	_	tga	agcg	gcc (	gccg	tcgt	771	L

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Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly 195 200 205



Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln 210 215 220	
Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp 225 230 240	
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cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala 35 40 45	144
gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val 50 55 60	192
caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val 65 70 75	240
agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala 80 85 90	288
gca atc gcc ctg ctg gag ctg gag gag ccg gtg aac gtc tcc agc cac Ala Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His 95 100 105 110	336
gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly 115 120 125	384
atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg	432

Page 36

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	cac cac tat His His Tyr				gee geegtegt	771
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Cys Gly Gly 35	Ser Leu Ile	His Pro (	Gln Trp	Val Leu Thr 45	Ala Ala His	
Cys Val Gly 50	Pro Asp Val	Lys Asp 3	Leu Ala	Ala Leu Arg 60	Val Gln Leu	

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile Page 37

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg 65 70 75 80

95

90

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His
100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Asp 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro 245

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	cac					tcc	ctc Leu				cag					gca	144
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		_			_		ctc Leu			-	_	_	_	_	_	_	240
							cca Pro 85										288
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	_		_	_		_	ccc Pro		_						_		384
/							ggc Gly										432
							ctg Leu										480
				_	_	_	aaa Lys 165					_		_		-	528
							gac Asp										576
							gac Asp										624
							gcg Ala										672
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Page 39

771

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Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu 50 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His
100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp 180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly 195 200 205

Page 40

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln 210 215 220	
Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp 225 230 235 240	
Ile His His Tyr Val Pro Lys Lys Pro 245	
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cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala 35 40 45	144
gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val 50 55 60	192
caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val 65 70 75	240
agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala 80 85 90	288
gac atc gcc ctg ctg gag ctg gag ccg gtg aac gtc tcc agc cac Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His 95 100 105 110	336
gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly 115 120 125	384
atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc Page 41	432

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145 150 155	
aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp 160 165 170	528
gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc cgg	576
Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg 175 180 185 190	
agg gac tca tgc caa gga gac gcc ggc gga cca ctg gtg tgc aag gtg Arg Asp Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val	624
195 200 205	
aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt	672
Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys 210 215 220	
gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg	720
Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu 225 230 235	
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Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His	
35 40 45	
Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu	
50 55 60	
Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg	
65 70 75 80	

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His
100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp 180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly
195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro 245

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<213> Homo sapiens

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ctc a Leu I	le E															144
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ctc t Leu T 65																240
cca c Pro G																288
ctg g Leu G																336
ccc c Pro P	ro P															384
ggc t Gly T 1																432
ctg a Leu L 145																480
aaa t Lys T																528
gac g Asp A																576
gac t Asp S	Ser G															624
gcg g Ala G 2																672
ggc a Gly I 225																720
gtc c Val P										•	_ ^^					735

245

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<213> Homo sapiens

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Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Cys Val Gly Pro 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu 85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu
100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Pro 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly 180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln Page 45 195 200 20

Ala Gly Val Val Ser T	Trp Gly Glu Gly 215	Cys Ala Gln Pro Asn 220	Arg Pro
Gly Ile Tyr Thr Arg V 225	Val Thr Tyr Tyr 230	Leu Asp Trp Ile His 235	His Tyr 240
Val Pro Lys Lys Pro 245	. ,		
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gac gtc aag gat ctg o Asp Val Lys Asp Leu A 50			_
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cca cag ttc tac acc o Pro Gln Phe Tyr Thr A 85			
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ccc cct gcc tca gag a Pro Pro Ala Ser Glu 1 115			

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Page 48

Pro	Gln	Phe	Tyr	Thr 85	Ala	Gln	Ile	Gly	Ala 90	Ala	Ile	Ala	Leu	Leu 95	Glu
Leu	Glu	Glu	Pro 100	Val	Asn	Val	Ser	Ser 105	His	Val	His	Thr	Val 110	Thr	Leu
Pro	Pro	Ala 115	Ser	Glu	Thr	Phe	Pro 120	Pro	Gly	Met	Pro	Cys 125	Trp	Val	Thr
Gly	Trp 130	Gly	Asp	Val	Asp	Asn 135	Asp	Glu	Arg	Leu	Pro 140	Pro	Pro	Phe	Pro
Leu 145	Lys	Gln	Val	Lys	Val 150	Pro	Ile	Met	Glu	Asn 155	His	Ile	Cys	Asp	Ala 160
Lys	Tyr	His	Leu	Gly 165	Ala	Tyr	Thr	Gly	Asp 170	Asp	Val	Arg	Ile	Val 175	Arg
Asp	Asp	Met	Leu 180	Cys	Ala	Gly	Asn	Thr 185	Arg	Arg	Asp	Ser	Cys 190	Gln	Gly
Asp	Ser	Gly 195	Gly	Pro	Leu	Val	Cys 200	Lys	Val	Asn	Gly	Thr 205	Trp	Leu	Gln
Ala	Gly 210	Val	Val	Ser	Trp	Gly 215	Glu	Gly	Cys	Ala	Gln 220	Pro	Asn	Arg	Pro
Gly 225	Ile	Tyr	Thr	Arg	Val 230	Thr	Tyr	Tyr	Leu	Asp 235	Trp	Ile	His	His	Tyr 240
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										gac Asp						288
										gtc Val						336
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										aac Asn 155						480
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										agg Arg					ggc Gly	576
										aat Asn						624
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Val Pro Lys Lys Pro 245

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<211> 245

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<213> Homo sapiens

<400> 49

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Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu 85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu
100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly 180 185 190

Asp Ala Gly Gl	/ Pro Leu Val	Cys Lys Val	Asn Gly Thr Trp	Leu Gln
195		200	205	

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Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr 230 235

Val Pro Lys Lys Pro 245

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20 ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro 35 40

25

gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His

ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His

288 cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu 85

ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg 336 Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu 100 110

eee eet gee tea gag ace tte eee eeg ggg atg eeg tge tgg gte act 384 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr 115 120 125

Page 51

Gly Trp Gly 130	gat gtg Asp Val								432
ctg aag cag Leu Lys Gln 145		-						_	480
aaa tac cac Lys Tyr His									528
gac gac atg Asp Asp Met	ctg tgt Leu Cys 180	gcc ggg Ala Gly	Asn Th	cc cgg hr Arg 85	agg gac Arg Asp	Ser C	gc caa Cys Gln 190	gga Gly	576
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gcg ggc gtg Ala Gly Val 210									672
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Ile Val Gly	5			10		Cys G	15		
Ile Val Gly 1	5 Val His 20	Gly Pro	Tyr Tr 25	10 rp Met 5	His Phe	Cys G	15 Gly Gly 30	Ser	
Ile Val Gly 1 Ser Leu Arg	Val His 20 Pro Gln	Gly Pro	Tyr Tr 25 Leu Tr 40	10 rp Met 5 hr Ala	His Phe	Cys G 3 Cys V 45	15 Gly Gly 30	Ser Pro	

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu 85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly 180 185 190

Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln
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Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val Ser Leu
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Arg Val Arg Asp Arg Tyr Trp Met His Phe Cys Gly Gly Ser Leu Ile 50 55 60

His Pro Gln Trp Val Leu Thr Ala Ala His Cys Leu Gly Pro Asp Val

Lys Asp Leu Ala Thr Leu Arg Val Gln Leu Arg Glu Gln His Leu Tyr

Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His Pro Gln

Phe Tyr Ile Ile Gln Thr Gly Ala Asp Ile Ala Leu Leu Glu Leu Glu 120 115

Glu Pro Val Asn Ile Ser Ser Arg Val His Thr Val Met Leu Pro Pro 130

Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr Gly Trp 145

Gly Asp Val Asp Asn Asp Glu Pro Leu Pro Pro Pro Phe Pro Leu Lys 165

Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala Lys Tyr 180

His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Ile Arg Asp Asp 195 200

Met Leu Cys Ala Gly Asn Ser Gln Arg Asp Ser Cys Lys Gly Asp Ser 210

Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln Ala Gly

Val Val Ser Trp Asp Glu Gly Cys Ala Gln Pro Asn Arg Pro Gly Ile 245

Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr Val Pro 265

Lys Lys Pro